

# **Inclusion of Immunization Information in HIT/EMR**

November 10, 2009

# Our objectives

- Capitalize on EMR/HIT to ensure that each patient gets the right immunization at the right time
  - Necessary and appropriate tools for physicians that support patient centric care
  - Tools that support patients, but also broader research goals
- Use EMR/HIT protocols to actively improve the public health and reduce mortality and morbidity
- Further demonstrate a clear linkage between the use of EMR/HIT and an effective, efficient health care system
- Suggest specific data elements and functionality to reach these objectives

# **Benefit of Immunization**

- Immunizations create significant reductions in mortality and morbidity
- Reduced Vaccine Preventable Disease rates shown in children
- Vaccines reduce total health care expenditures

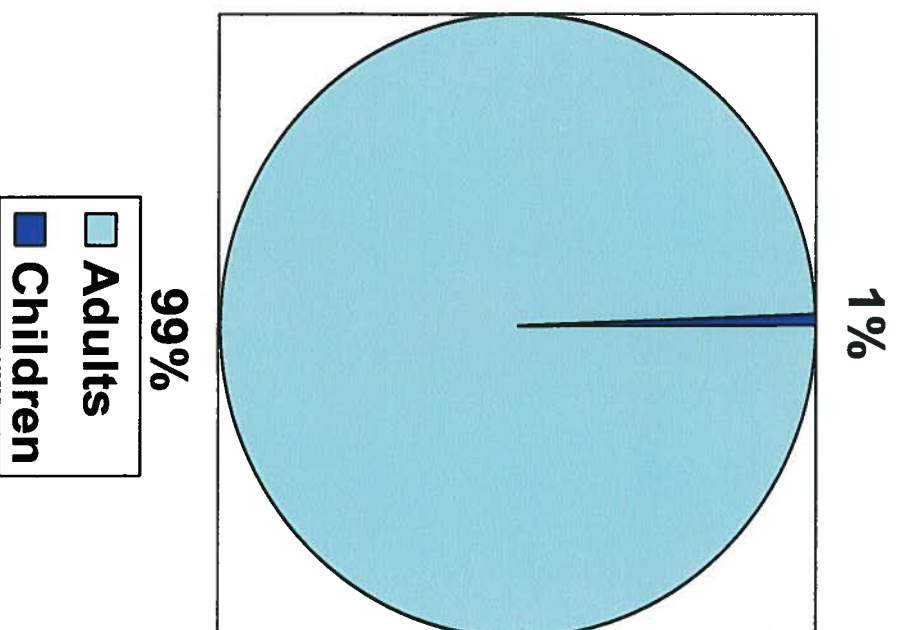
# While the U.S. childhood vaccination program has been a great success...

Comparison of Maximum and Current  
Reported Morbidity: Vaccine-Preventable Diseases (VPD) in the US

Disease	Prevaccine Era	Year	1999	% Decrease
Diphtheria	206,939	1921	1	-99.99
Measles	894,134	1941	100	-99.99
Mumps	152,209	1968	391	-99.75
Pertussis	265,269	1934	7,288	-97.25
Polio (wild)	21,269	1952	0	-100.00
Rubella	57,686	1969	267	-99.53
Cong. Rubella synd.	20,000+	(1964-5)	6	-99.96
Tetanus	1,560+	1948	42	-97.31
Invasive Hib disease	20,000+	1984	1,309 (33)	-99.65
Total	1,639,066		9,404	3

## Adult mortality from vaccine-preventable diseases still occurs

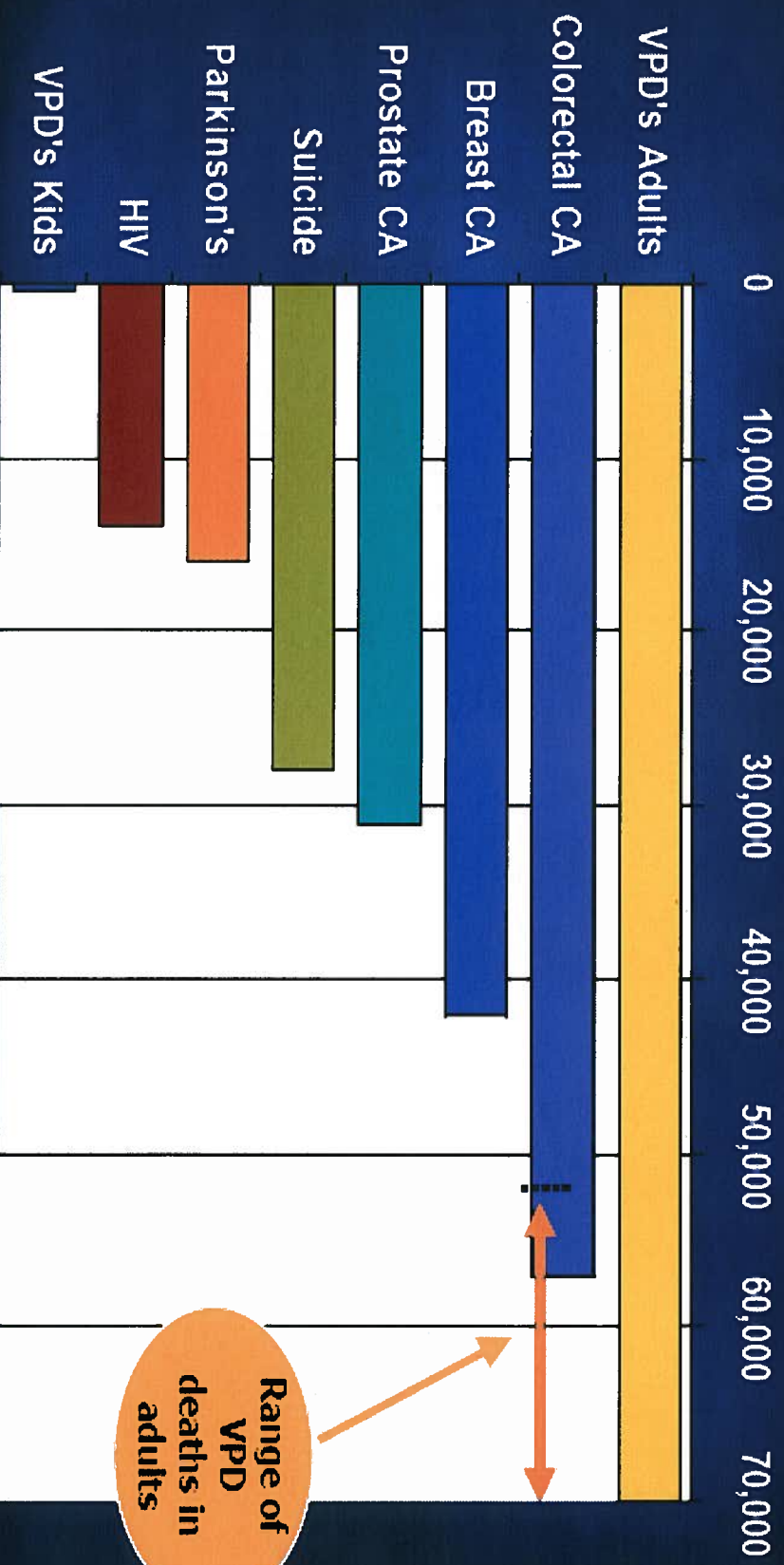
### Annual VPD Deaths



- Adults: 99% of VPD deaths
  - 50,000 to 70,000 deaths each year
- Children: 1% of VPD deaths
  - 100 to 300 deaths each year

Source: CDC. National Vital Statistics Reports: Deaths: Final Costs for 2000. Hyattsville, MD: National Center for Health Statistics; 2002.

# VPD Deaths in Adults are Similar to Other Important Causes of Death in Adults



Source: CDC, NCHS (online data for 2000).



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION



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# Adult Immunizations Lag Pediatric

- At least 50,000 adults die each year from vaccine preventable diseases
- Hundreds of thousands more are hospitalized
- Significant cost burden to the US
  - Influenza costs estimated at \$10 billion per year
  - Pneumonia significant hospital diagnosis for Medicare
- While pediatric immunization rates are 90% plus, adult immunization is about 60-65%
- Prevention, including adult immunization in particular, is of concern to CMS

## **Some of the reasons for the lag in adult immunization**

- Lack of public awareness of the value of adult immunizations
- Uncertainty about immunization safety
- Lack of awareness among healthcare professionals
- Confusion about vaccination schedules
- Lack of adult vaccine delivery infrastructure
- Physicians not always offer immunizations during visits
- Insufficient quality measures
- Insufficient reimbursement

# HIT/EMR systems can help

- **Inclusion of updated ACIP/CDC recommendations coupled with physician reminder screens**
  - Identify appropriate patients for each recommended immunization
  - Increases physician awareness of immunizations during each patient visit
  - Reduces confusion about the ACIP/CDC recommendations
- **Records of whether the immunization was administered, or the reason why not**
  - Identifies and incidence of barriers to immunization in the patient-physician relationship – helps develop effective strategies and communications
  - A growing vaccine registry – a key component of vaccine infrastructure
  - Data that will facilitate the implementation and enforcement of quality measures while recognizing that physicians do not have complete control over the immunization process.
- **Specific information about the manufacturer, lot number, etc.**
  - Allows extensive and accurate surveillance for safety and epidemiological studies

# **Immunization details already recommended by CCHIT**

- Immunization type and dose
- Date and time of administration
- Route and site of administration
- Lot number and expiration date
- Manufacturer
- User ID
- Allergy/adverse reaction, if any

# **Proposed additional functionality for meaningful use certification**

- Complete and automated updates of ACIP/CDC vaccination schedule
- Proactive physician alert for each individual patient
- Provision to record why an immunization was not administered
  - Clinical
  - Religious/other as stated by patient or patient family
  - Other
- Data aggregation to generate reports, exceptions, etc.
- Automated submission of data to registries
- Ability to generate patient-specific reports to populate personal health records

# Benefits to Public Health

- Increased physician awareness and attention to immunization – especially adult immunization
- Reduced confusion about the ACIP/CDC immunization schedule
- Increased information about patient refusal of immunizations
- Potential significant increases in medically appropriate adult immunizations
- Immunization related reductions in morbidity and mortality – and the associated human and economic costs